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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,922	07/09/2001	Worthington B. Houghton JR.	155603-0195	7104

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EXAMINER

WILLIAMS, THOMAS J

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,922

Applicant(s)

HOUGHTON ET AL.

Examiner

Thomas J. Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 and 29-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 and 29-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 17, 2005 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6, 8-12, 14-18, 20-23, 25, 26 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,071,108 to Houghton, Jr. in view of DE 196 26 330 to Froehlich et al.

Re-claims 1 and 29, Houghton, Jr. teaches a vibration isolator, comprising: a housing 23 with an outer alignment means 32; a support plate 28 moves in an axial direction relative to the housing, the support plate 28 is provided with a means for seating the support plate (interpreted as 31, column 3 lines 23-30) with the outer alignment means of the housing so that the support plate will be seated in the housing during deflation of an inner chamber 16; a vibration isolator or pendulum 21 is coupled to the support plate.

Houghton, Jr. teaches the vibration isolator is equipped with an automatic or self-centering function, see column 3 lines 28-30. However, Houghton, Jr. fails to provide the details of the automatic centering means, such as the outer seat and the shoulder having a non-circular shape for preventing rotation during the centering operation when the inner chamber is deflated.

Froehlich et al. teach a self-centering feature that utilizes non-circular (square) abutment members 12 and 20/21. Furthermore, Froehlich et al. teach that this self-centering feature reduces assembly time. It would have been obvious to one of ordinary skill in the art to have provided the self-centering means of Houghton, Jr. with non-circular abutting members as taught by Froehlich et al., this would have reduced the setup time for the isolator by eliminating unwanted rotation and off center alignment.

Re-claim 2, the outer seat of Houghton, Jr. is tapered.

Re-claim 3, the pendulum assembly 21 includes a cable 22 coupled to a piston 15 and the support plate 28, the piston 15 is coupled to the housing via the cable for instance.

Re-claim 4, the housing 23 has an inner seat and the piston is provided with an outer top surface. Houghton, Jr. teaches that the centering structure 38 of figure 2 can be incorporated into

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the embodiment of figure 1, column 4 lines 21-25. However, Houghton, Jr. fail to teach the non-circular design of inner seat and outer top surface.

Froehlich et al. teach a self-centering feature that utilizes non-circular (square) abutment members 12 and 20/21. Furthermore, Froehlich et al. teach that this self-centering feature reduces assembly time. It would have been obvious to one of ordinary skill in the art to have provided the self-centering means of Houghton, Jr. with non-circular abutting members as taught by Froehlich et al., this would have reduced the setup time for the isolator by eliminating unwanted rotation and off center alignment.

Re-claim 5, the housing 23 includes an inner cylinder 10 which defines a first inner chamber 16 and is located within a second inner chamber defined by hollow leg 13, see column 2 lines 44-46, the piston 15 is located within the first inner chamber 16.

Re-claim 6, the inner cylinder 10 includes a damping element 17, compressed gas is a damping element.

Re-claims 8 and 30, Houghton, Jr. teaches a vibration isolator, comprising: a housing 23 having an inner seat 32; a support plate 28 moves in an axial direction relative to the housing 23; a piston 15 with an outer surface 26/31 that is seated for centering during deflation and inflation of an inner chamber; a vibration isolator, which includes a cable 22, is coupled to the piston and the support plate, the cable is coupled to the piston 15 and the support plate 28 via the pendulum assembly 21 in figure 1. Houghton, Jr. teaches that centering structure 38 of embodiment 2 (figure 2) can be used in embodiment 1 (figure 1). This structure will provide the housing with an inner and outer seat, the seats are seen as axially opposing surfaces of element 34. However,

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Houghton, Jr. fails to teach the inner seat and the outer surface of the piston as having a non-circular shape, thus preventing rotation of the support plate when seated.

Froehlich et al. teach a self-centering feature that utilizes non-circular (square) abutment members 12 and 20/21. Furthermore, Froehlich et al. teach that this self-centering feature reduces assembly time. It would have been obvious to one of ordinary skill in the art to have provided the self-centering means of Houghton, Jr. with non-circular abutting members as taught by Froehlich et al., this would have reduced the setup time for the isolator by eliminating unwanted rotation and off center alignment.

Re-claim 9, the inner seat is tapered.

Re-claim 10, the housing 23 has an outer seat and the support is provided with a shoulder 32. However, Houghton, Jr. fail to teach the non-circular design of outer seat and shoulder.

Froehlich et al. teach a self-centering feature that utilizes non-circular (square) abutment members 12 and 20/21. Furthermore, Froehlich et al. teach that this self-centering feature reduces assembly time. It would have been obvious to one of ordinary skill in the art to have provided the self-centering means of Houghton, Jr. with non-circular abutting members as taught by Froehlich et al., this would have reduced the setup time for the isolator by eliminating unwanted rotation and off center alignment.

Re-claim 11, the housing 23 includes an inner cylinder 10 which defines a first inner chamber 16 and is located within a second inner chamber defined by hollow leg 13, see column 2 lines 44-46, the piston 15 is located within the first inner chamber 16.

Re-claim 12, the inner cylinder 10 includes a damping element 17, compressed gas is a damping element.

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Re-claims 14 and 31, Houghton, Jr. discloses a vibration isolator, comprising: a housing 23 with an outer alignment means 32 and an inner chamber 16; a support plate 28 that moves in an axial direction relative to the housing 23, the support plate is provided with means for seating the support plate (interpreted as 31, column 3 lines 23-30) with the outer alignment means of the housing 32 when the inner chamber is deflated (see column 3 lines 53-64); a pendulum 21 is coupled to the support plate. However, Houghton, Jr. fails to teach the alignment means as having an anti-rotation feature.

Froehlich et al. teach a self-centering feature that utilizes non-circular (square) abutment members 12 and 20/21. Furthermore, Froehlich et al. teach that this self-centering feature reduces assembly time. It would have been obvious to one of ordinary skill in the art to have provided the self-centering means of Houghton, Jr. with non-circular abutting members as taught by Froehlich et al., this would have reduced the setup time for the isolator by eliminating unwanted rotation and off center alignment.

Re-claim 15, the pendulum assembly 21 includes a cable 22 coupled to a piston 15 and the support plate 28, the piston is coupled to the housing 23 via the cable.

Re-claim 16, the housing 23 is provided with an inner alignment means, the piston has means for aligning with the housing. Houghton, Jr. discloses that alignment means 38 of figure 2 can be incorporated into the embodiment of figure 1.

Re-claim 17, the housing 23 includes an inner cylinder 10 which defines a first inner chamber 16 and is located within a second inner chamber defined by hollow leg 13, see column 2 lines 44-46, the piston 15 is located within the first inner chamber 16.

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Re-claim 18, the inner cylinder 10 includes a damping element 17, compressed gas is a damping element.

Re-claims 20 and 32, Houghton, Jr. discloses in figure 1 a vibration isolator, comprising: a housing 23 with an inner alignment means 34 and an inner chamber 16; a support plate 28 moves in both an axial and rotational direction relative to the housing; a piston 15 moves in an axial direction (such as when being fully extended) and has alignment means for seating the piston with the inner alignment means of the housing 34 (interpreted as structure 38 and 44) when the inner chamber is inflated (see column 4 lines 21-38); a vibration isolator, which includes a cable 22, is coupled to the piston and support plate. Houghton, Jr. discloses that the embodiment of figure 1 can incorporate the piston alignment means 38 of the embodiment in figure 2, column 4 lines 21-25. However, Houghton, Jr. fails to teach an anti-rotation feature when the inner chamber is inflated.

Froehlich et al. teach a self-centering feature that utilizes non-circular (square) abutment members 12 and 20/21. Furthermore, Froehlich et al. teach that this self-centering feature reduces assembly time. It would have been obvious to one of ordinary skill in the art to have provided the self-centering means of Houghton, Jr. with non-circular abutting members as taught by Froehlich et al., this would have reduced the setup time for the isolator by eliminating unwanted rotation and off center alignment.

Re-claim 21, the housing 23 is provided with an outer alignment means 32, the support plate 28 has means for 31 aligning with the housing.

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Re-claim 22, the housing 23 includes an inner cylinder 10 which defines a first inner chamber 16 and is located within a second inner chamber defined by hollow leg 13, see column 2 lines 44-46, the piston 15 is located within the first inner chamber 16.

Re-claim 23, the inner cylinder 10 includes a damping element 17, compressed gas is a damping element.

Re-claims 25 and 33, Houghton, Jr. teaches a method for aligning a support plate 35 of a pneumatic vibration isolator, comprising: releasing fluid from a housing 10 of a vibration isolator such that a support plate 35 is seated within a seat 34 of the housing, the support plate is coupled to a vibration isolator/pendulum assembly. However, Houghton, Jr. fails to teach the housing as having a non-circular seat, thus preventing unwanted rotation of the support plate when seated with the housing.

Froehlich et al. teach a self-centering feature that utilizes non-circular (square) abutment members 12 and 20/21. Furthermore, Froehlich et al. teach that this self-centering feature reduces assembly time. It would have been obvious to one of ordinary skill in the art to have provided the self-centering means of Houghton, Jr. with non-circular abutting members as taught by Froehlich et al., this would have reduced the setup time for the isolator by eliminating unwanted rotation and off center alignment.

Re-claim 26, a payload 12 is attached to the support plate 28.

5. Claims 7, 13, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houghton, Jr. in view of Froehlich et al. as applied to claims 1/3, 8, 14/15 and 20 above, and further in view of US 5,779,010 to Nelson.

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Re-claims 7, 13, 19 and 24, Houghton, Jr. as modified by Froehlich et al. fail to teach a hollow piston opening into the first inner chamber. Nelson teaches a vibration isolator having a hollow piston 26, thus defining an inner cavity. It would have been obvious to one of ordinary skill in the art to have provided the device of Houghton, Jr. with a hollow piston as taught by Nelson, thus reducing the overall weight of the vibration isolating device.

Response to Arguments

6. Applicant's arguments with respect to claims 1-26 and 29-33 have been considered but are moot in view of the new ground(s) of rejection.

It is the opinion of the examiner that the non-circular design of the centering device taught in DE 1605178 will inherently prevent rotation, as in Froehlich et al. However, for clarity Froehlich et al. is used in the above rejection. It is believed that Froehlich et al. better illustrates the rotation preventing aspect the applicant claims as the novel feature. Clearly abutment portions 20 and 21, which are planer surfaces, will prevent rotation during the centering operation.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Eddy teaches a pneumatic isolator with a self-centering function.

8. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is 571-272-7128. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor, can be reached at 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-6584.

TJW

July 14, 2005

THOMAS WILLIAMS
PATENT EXAMINER

Thomas Williams

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7-14-05